**Bonding Atoms**

A molecule or compound is formed when two or more atoms bond together. A **chemical bond** is the force that holds atoms together. Each atom has a specific number of bonds that can be formed. **Noble gas** atoms are the only elements that never want to form bonds.

A **covalent bond** is formed between two non-metal atomsthat share a pair of electrons. A covalent bond between two or more atoms forms a **molecule**. Some common molecules are water H2O, glucose C6H12O6 and nitrogen gas N2.

Later we will study how atoms gain or lose electrons to form ions. **Ions** are atoms with an electric charge. Oppositely charged ions are attracted to each other and form ionic bonds. An **ionic bond** is formed by an electrical attraction betweena metal ion and a non-metal ion. An ionic bond between two ions forms a **compound**. Some common compounds are salt NaCl, iron oxide Fe2O3 or copper oxide Cu2O.

**Bonding capacity** or “combining capacity”is the ability of an atom of an element to chemically combine with other atoms. The periodic table can be used to determine the bond capacity of an element.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Group** | 1 | 2 | 13 | 14 | 15 | 16 | 17 | 18 |
| **# Bonds** | 1 | 2 | 3 | 4 | 3 | 2 | 1 | 0 |
| **Example**  **Element** | Na | Be | Al | C | P | O | Cl | Ne |

Homework:

1. Read p 62 – 63

2. Copy and label the right side of Fig 4.

3. Answer p 63 #1–3,5

**Bonding Atoms**

A molecule or compound is formed when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A **chemical bond** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each atom has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that can be formed. **Noble gas** atoms are the only elements that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ want to form bonds.

A **covalent bond** is formed between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A covalent bond between two or more atoms forms a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some common molecules are water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, glucose \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and nitrogen gas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Later we will study how atoms gain or lose electrons to form ions. **Ions** are atoms with an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Oppositely charged ions are attracted to each other and form ionic bonds. An **ionic bond** is formed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. An ionic bond between two ions forms a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Some common compounds are salt \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, iron oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or copper oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Bonding capacity** or “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” is the ability of an atom of an element to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The periodic table can be used to determine the bond capacity of an element.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Group** | 1 | 2 | 13 | 14 | 15 | 16 | 17 | 18 |
| **# Bonds** |  |  |  |  |  |  |  |  |
| **Example**  **Element** |  |  |  |  |  |  |  |  |

Activity: Building Models

Homework:

1. Read p 62 – 63

2. Copy and label the right side of Fig 4.

3. Answer pg 63 #**1–3, 5**